Mandar Sanju Bavdane

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Website | Github | LinkedIn

EDUCATION

Stevens Institute of Technology, Hoboken, NJ | *Master of Science in Computer Science* **August 2025 - May 2027**
Machine Learning | Data Structures and Algorithms | Concurrent Programming

Xavier Institute of Engineering, Mumbai, India | **May 2024**
Bachelor of Engineering in Electronics and Telecommunication (Hons. in AIML) – 3rd Rank **(CGPA 8.88/10)**

PROFESSIONAL EXPERIENCES

Aurae Health, Singapore/ Bengaluru, India | *Software Development Engineer* **August 2024 – August 2025**

- Managed and optimized the company's website while specializing in React-based development, resulting in 25% improvement in page load speed and enhanced user engagement
- Developed responsive user interfaces and scalable full-stack solutions using React, Next.js, Node.js, and Firebase which contributed to 30% increase in application performance and 40% reduction in backend response times. Integrated AI-driven features for healthcare applications, improving user experience and patient interaction rates by 20%
- Created over 10 product videos and contributed to research initiatives, actively co-authoring a paper for publication, demonstrating commitment to innovation and knowledge dissemination in technology and healthcare domains

Paravai Aerospace Pvt Ltd, Mumbai, India | *Electronics Intern - Robotic Engineer* **June 2022 – October 2022**

- Developed and tested a Robo-Car using an ESP32 microcontroller and L289N motor driver during the period
- Incorporated ultrasonic sensor, voltage sensor, servo motor, geared motor, OLED display, and microcontroller
- Worked on the soldering station, 3D printer, and CNC machine, and conducted research and analysis for novel solutions
- Implicated hardware components with software algorithms for smooth operation and learned tech documentation

CMP Infotech, Mumbai, India | *SQL Database and Web Development Intern* **Dec 2021 - Jan 2022**

- Completed the 'Movie Mart' project using SQL and 'Home Workout Website' using ASP.Net with C#
- Designed and implemented a relational database to manage information about movies and developed complex SQL queries for data retrieval and manipulation

ACADEMIC PROJECTS AND PAPERS

Robust Super-Resolution using Deep Learning |TensorFlow, PyTorch, Keras, GANS, LINUX

- Modeled a system to address the limitations of traditional super-resolution methods by leveraging the power of Deep Neural Networks to produce high-resolution images from low-resolution images
- Employed GANs such as SRGAN, ESRGAN, and Real-ESRGAN for evaluation metrics and loss functions and utilized Deep Learning frameworks, TensorFlow, PyTorch, and Keras to optimize complex models for super-resolution
- Authored and published a research paper in "Bulletin for Technology and History" (Apr 2024, Vol 24, Issue - 4, ISSN: 0391-6715); "Journal of Emerging Technologies and Innovative Research" (Mar 2024, Vol 11, Issue - 3, ISSN: 2349-5162)

IoT-Based Industry Protection System Using GSM with STM32 | LCD, Microcontrollers, HTML, CSS, Python, JavaScript

- Conceptualized a device to monitor machine status and inform supervisors of malfunctions, enhancing safety
- Integrated STM32 microcontroller for reliable real-time monitoring with SIM800L GSM module for alerts and ESP8266 for remote monitoring and enabling immediate supervisor notifications
- Entailed DHT11 sensor for temperature and humidity monitoring, LCD for local status, STM32 Cube for development, Python for backend processing, and HTML, CSS, and JavaScript for user-friendly remote monitoring

TINA the Chat-bot (TensorFlow Integrated Neural Network Assistant) | Python libraries, HTML, CSS, JavaScript

- Devised T.I.N.A, an NLP-based chat-bot, providing 24x7 assistance, enhancing customer engagement
- Utilized HTML, CSS, and JavaScript to build a seamless interface; leveraged Python's Flask module to manage data flow efficiently with GET and POST methods; applied TensorFlow and incorporated essential Python libraries such as NumPy, TfLearn, TensorFlow, Random, JSON, and Pickle to build, train, and improve the chatbot's accuracy and performance

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, JavaScript **| Front-End Technologies:** HTML, CSS, Next.js, Tailwind CSS, Three.js, Shadcn/UI, GSAP **| Back-End Technologies:** MERN Stack, Node.js Firebase, .NET **| Software:** DevOps
- **Databases:** Firebase, MongoDB, PostgreSQL, Appwrite **| Operating Systems:** Windows, Linux, Android and macOS
- **Microprocessors and Microcontrollers:** Atmega328(Arduino UNO), Arduino Nano, ESP32, and STM32
- **Technologies:** Machine Learning and Deep Learning Algorithms, Cloud Computing, API Development

COURSES AND CERTIFICATIONS

- Earned 12 Google Cloud Skill Badges on Generative AI and MLOps, covering advanced topics like LLMs, Transformer & BERT models, Attention Mechanism, Encoder-Decoder Architectures, Image Captioning, and Responsible AI – June 2024
- 'Big Data Programming Languages and Big Data Vs Data Science' and 'The Web Front End Learning Guide' by Udemy, Jun 2023 | Software Development Fundamentals (Dec 2021), Database Fundamentals (Oct 2021) – MTA